CITY OF CARLSBAD
CLASS SPECIFICATION

JOB SERIES: **SYSTEMS ADMINISTRATOR**
SENIOR SYSTEMS ADMINISTRATOR

DEPARTMENT: **INFORMATION TECHNOLOGY**

DISTINGUISHING FEATURES AND SUMMARY DESCRIPTION:

The primary purpose of this role is to use experience and expertise to resolve technical problems and design new solutions relating to information technology systems and systems infrastructure.

The **System Administrator** is responsible for effectively obtaining, installing, configuring, operating, and maintaining systems hardware and software and related IT infrastructure. This role participates in technical research and development to enable continuing innovation of the technology infrastructure. The System Administrator ensures that system hardware, operating systems, software systems, and related procedures adhere to best practice and organizational values, as well as that these systems support staff, volunteers, and partners in effectively using the city's virtual and cloud computing infrastructure.

The System Administrator assists project teams with technical issues in the initiation and planning phases of standard project management methodology. These activities include the definition of needs, benefits, and technical strategy; research & development within the project implementation and management life-cycle; technical analysis and design; and support of operations staff in executing, testing and rolling-out the solutions. Participation on projects is focused on smoothing the transition of projects from development staff to production staff by performing operations activities within the project implementation and management life-cycle.

The System Administrator develops, configures, deploys and maintains the enterprise systems to avoid interruptions in services.

The **Senior System Administrator** is responsible for overseeing a team in effectively obtaining, installing, configuring, operating, and maintaining systems hardware and software and related IT infrastructure. This role leads technical research and development to enable continuing innovation of the technology infrastructure. The Senior System Administrator ensures that system hardware, operating systems, software systems, and related procedures adhere to best practice and organizational values, as well as that these systems support staff, volunteers, and partners in effectively using the city's virtual and cloud computing infrastructure.

The Senior System Administrator oversees project teams in the initiation and planning phases of project management methodology. These activities include the definition of needs, benefits, and technical strategy; research & development within the project implementation and management life-cycle; technical analysis and design; and support of operations staff in executing, testing and rolling-out solutions. Oversight of projects is focused on smoothing the transition of projects from development staff to production staff by performing operations activities within the project implementation and management life-cycle.

The Senior System Administrator oversees development, configuration, deployment and maintenance of the enterprise systems to avoid interruptions in services and supervises the work of less experienced team members or project teams.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

The following duties are typical for this role. Incumbents may not perform all of the listed duties and/or may be required to perform additional duties from those listed below to meet the city's business needs and changing operating practices and overall technological trends. Other duties may be required and assigned. After hours support and participation in on-call rotations required.

Systems Administrator:

- Performs routine system maintenance.
- Configures and maintains system infrastructure for the city.
- Creates new users and associated file access rights.
- Identifies and resolves system problems.
- Performs a variety of duties in the monitoring, installation, testing, configuration and troubleshooting of hardware and software and system or application upgrades.
- Conducts repairs and maintains preventative system maintenance schedules.
- Conducts troubleshooting on assigned user rights, file access, security settings, and enterprise systems.
- Provides assistance to information systems staff in the evaluation, selection, acquisition and implementation of computer hardware and software.
- Provides technical training to end users.
- Engineering of system administration-related solutions for various project and operational needs.
- Install new and rebuild existing servers; configure hardware, peripherals, services, settings, directories, storage, etc. in accordance with standards and project/operational requirements.
- Maintains server and application virtualization technologies including VMWare, and Citrix.
- Knowledge of enterprise storage systems.
- Maintains system infrastructure services including Active Directory (AD), domain controllers, domain name services (DNS), antivirus and security systems, enterprise printing services, and server management and monitoring tools.
- Maintains mobile device management (MDM) systems, enables MDM policies for BYOD and city issued devices, ensures secure access to city's information from mobile devices.
- Maintains conference room video conferencing, telepresence and collaboration systems.
- Maintains enterprise application including email, unified communications
- and collaboration presence and instant messaging systems.
- Develop and maintain installation and configuration procedures.
- Contribute to and maintain system standards and policies.
- Research and recommend innovative (and where possible automated) approaches for system administration tasks. Identify approaches that leverage resources and provide economies of scale.
- Perform daily system monitoring, verifying the integrity and availability of all systems hardware, capacity management, server resources, systems and key processes, reviewing system and application logs, and verifying completion of scheduled jobs such as backups.
- Perform regular security monitoring to identify any possible intrusions.
- Perform daily backup operations, ensuring all required file systems and system data are successfully backed up to the appropriate media, recovery tapes or disks are created, and media is recycled and sent off site as necessary.
- Perform regular file archival and purge as necessary.

- Repair and recover from hardware or software failures. Coordinate and communicate with impacted end users.
- Upgrade and configure system software that supports systems infrastructure applications or applications per project or operational needs.
- Maintain operational, installation and configuration procedures.
- Perform periodic performance reporting to support capacity planning.
- Perform ongoing performance tuning, hardware upgrades, and resource optimization as required. Configure CPU, memory, and disk partitions as required.
- Maintain data center environmental and monitoring equipment.
- Integrates and maps business needs and strategies of internal and external customers and maps into technology infrastructure and solutions.
- Manages, maintains and applies server Operating System patches and upgrades, including virtualized environments. Configure and add new services as necessary.
- Analyzes system and network security risks and secure access; network stability and usage.
- Plans and builds Disaster Recovery replication practices.
- Acquires system products and makes preparations for implementation and integration.
- Provides project support on server/application projects.
- Makes recommendations on software and hardware upgrades, capacity requirements and creation of virtual environments.
- Responds to and executes electronic discovery jobs for information pertaining to legal matters and public records requests.
- Conducts request for proposals, purchasing of hardware and software supplies and negotiates with vendors.
- Leads and manages technology vendors in the scope of assigned work for the City of Carlsbad.
- Recommends and assists in establishing technology user policies and procedures.
- Makes recommendations for budget planning.

Senior Systems Administrator:

- Determines, translates and programs business needs and issues into appropriate system to resolve end user requests.
- Plans, configures, and maintains system infrastructure for the city.
- Oversees implementation of system security.
- Performs the role of lead or supervisor; assigns work; distributes workload; authorizes timesheets; assists in recruitment processes and participates in performance reviews.
- Participates in long-range strategic system planning.
- Provides input for developing department policies.
- Manages others to resolve system problems.
- Oversees monitoring, installation, testing, configuration and troubleshooting of hardware and software and system or application upgrades.
- Oversees preventative system maintenance schedules.
- Oversees troubleshooting on security and enterprise systems.
- Provides oversight of evaluation, selection, acquisition and implementation of computer hardware and software.
- Provides technical training to end users.
- Engineering of system administration-related solutions for various project and operational needs.

- Oversees care of new and existing servers including: hardware, peripherals, services, settings, directories, storage, etc. in accordance with standards and project or operational requirements.
- Develops server specifications, performs capacity planning and installation of server hardware and software.
- Installs configures and maintains server operating systems, applies OS patches and upgrades on a regular basis.
- Plans, installs and maintains server and application virtualization technologies including VMWare, Citrix and HyperV.
- Develops enterprise storage system specification, and provides planning and implementation of storage systems.
- Plans, implements and manages cloud and Software as a Service (SaaS) strategies and contracts for services.
- Manages contracts and service level agreements from third party system infrastructure providers.
- Oversees mobile device management (MDM) systems, enables MDM policies for BYOD and city issued devices, ensures secure access to city's information from mobile devices.
- Oversees installation and configuration procedures.
- Oversees maintenance of system standards and policies.
- Research and recommend innovative (and where possible automated) approaches for system administration tasks. Identify approaches that leverage resources and provide economies of scale.
- Oversees daily system monitoring and regular security monitoring
- Plans, implements and maintains enterprise backup systems. Oversees daily backup operations, ensuring all required file systems, database and application data are successfully backed up.
- Oversees enterprise applications including email, unified communications and collaboration, presence and instant messaging systems.
- Manages and maintains system infrastructure services including Active Directory (AD), domain controllers, domain name services (DNS), antivirus and security systems, enterprise printing services, and server management and monitoring tools.
- Oversees conference room video conferencing, telepresence and collaboration systems.
- Supervise others in system failure recovery efforts; coordinate communication with impacted end users.
- Oversees upgrade and configuration of system software.
- Integrates and maps business needs and strategies of internal and external customers and maps into technology system infrastructure and solutions.
- Designs Disaster Recovery and business continuity strategies including planning and installation of DR systems for critical city business applications and data**.**
- Responds to and executes electronic discovery jobs for information pertaining to legal matters and public records requests.
- Conducts request for proposals, purchasing of hardware and software supplies and negotiates with vendors.
- Leads and manages technology vendors in the scope of assigned work for the City of Carlsbad.
- Oversees establishing technology user policies and procedures.
- Participates in budget planning.

JOB SERIES KNOWLEDGE AND ABILITIES

Systems Administrator

- Knowledge of encryption technologies such as bitlocker.
- Knowledge of Microsoft Windows Operating Systems: Windows 7\10, Windows Servers, Windows Active Directory, Windows Server GPO`s/PowerShell, Office 365.
- Knowledge of computer system operations: VMWare; Storage including: DELL\EMC, NETAPP/Tegile/IBM, CITRIX, Cloud Services-AWS/AZURE/Century Link; Disaster Recovery-Veeam/SafeHaven; Antivirus Systems; Printing Services; Backup and Restore systems that support IT infrastructures and Application systems that support City of Carlsbad.
- Knowledge of infrastructure services including Active Directory (AD), AD group policies, domain controllers, Directory Sync and Active Directory Federation Services, DNS, DHCP, WINS SNMP, SMTP, POP3 and iMAP.
- Knowledge of Unified communications and collaboration solutions.
- Knowledge of scripting, windows command line and PowerShell commands.
- Knowledge of general e-mail and other collaboration technologies.
- Knowledge of network servers, storage systems and maintenance.
- Knowledge of network connectivity.
- Ability to perform systems administration tasks on servers, storage systems and enterprise applications.
- Ability to investigate, troubleshoot and resolve issues.
- Ability to perform basic purchasing.
- Ability to work independently with occasional supervision.
- Ability to implement and maintain backup technologies and repair and recover from hardware or software failures
- Ability to design, plan and manage virtualization environments.
- Ability to provide effective customer service.
- Ability to establish and maintain effective and cooperative working relationships with city employees and the public.
- Ability to work well as part of a team.
- Ability to communicate well both in writing and verbally.
- Knowledge of Microsoft clustering.
- Knowledge of directories, group policies, file systems, domains and protocols.
- Broad knowledge of multiple technologies, servers, storage and security at the enterprise level.
- Working knowledge of information security principles and practices.

Senior Systems Administrator:
Knowledge and abilities listed above in addition to:

- Knowledge of principles and practice of project management.
- Ability to investigate and troubleshoot complex issues
- Ability to perform purchasing and prepare request for proposals and scope of work
- Ability to implement backup technologies and repair and recover from hardware or software failures.
- Ability to negotiate with vendors on pricing and terms and conditions.

- Ability to develop and maintain systems standards and best practices.
- Deep working knowledge of information security principles and practices.

JOB SERIES EXPERIENCE AND EDUCATION

Requires a bachelor's (4-year) degree, with a technical major, such as engineering or computer science, management information systems, information technology or a related discipline, or equivalent experience.

Systems Administration/System Engineer certification in Microsoft and VMware.

Minimum 5 years of professional system administration experience. Experience with an enterprise system of the same or greater scope and complexity.

Senior Systems Administrator
All requirements of the Systems Administrator in addition to:

Minimum 7 years of professional system administration experience. Experience with an enterprise system of the same or greater scope and complexity. Minimum 2 years of supervisory experience.

JOB SERIES ESSENTIAL FUNCTIONS:

The conditions below are representative of those that must be met by an employee to successfully perform the essential functions of the job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Language Ability:

- Requires ability to compare, count, differentiate, measure and/or sort, assemble, copy, record and transcribe data and information. Must be able to classify, compute, tabulate, and categorize data. Must be able to advise and provide interpretation to others on how to apply policies, procedures, and standards to specific situations. Needs to be able to use a variety of descriptive data and information such as: a variety of plans; resolutions; maps; reports; computer software operating manuals; procedures; guidelines; and routine correspondence.
- Must be able to communicate orally and in writing, clearly and concisely and in a non-technical manner with city personnel at all levels; consultants; vendors; and the general public.
- Needs the ability to read, analyze, and interpret general business periodicals, professional journals, technical procedures, or governmental regulations. Must be able to write reports, business correspondence, and procedure manuals. Needs to effectively present information and respond to questions from groups of managers, clients, and the general public.

Judgment and Situational Reasoning Ability:

Must be able to use functional reasoning and apply rational judgment when performing diversified work activities. Needs to be able to analyze data and information using established criteria in order to determine consequences and identify and select alternatives.

Physical Requirements:

- Needs to be able to operate equipment and machinery with some requiring rapid adjustments such as a computer keyboard and terminal, digitizer, plotter, blue line printers, photocopier, calculator, drafting instruments, and engineer and architect scale. Must be able to coordinate eyes, hands, feet and limbs in performing skilled movements such as rapid keyboard use. Needs to be able to recognize and identify degrees of similarities or differences between characteristics of colors, textures, and forms associated with job-related objects, materials, and tasks.

- Essential and marginal functions may require maintaining physical condition necessary for sitting for prolonged periods of time. Must be able to exert light physical effort, typically involving lifting, carrying, pushing and pulling of up to 50 pounds. Tasks may involve extended periods of time at a keyboard or workstation. Needs to be able to perform frequent downward flexion of neck, side-to-side turning of the neck, fine finger dexterity and grasp to manipulate the keyboard, telephone, writing instruments, papers, books, manuals, and reports.

- Job entails occasional walking, standing, bending, stooping, climbing, reaching at and above shoulders and twisting at the waist. On an infrequent basis, the incumbent must be able to squat and kneel.

- Work may involve occasional outdoor fieldwork.

- Overtime and attending meetings outside regular work hours may be required. Work environment is professional and both team and autonomy oriented. This position is impacted by urgent time deadlines due to various reporting and filing requirements.

- There is some repetitiveness in program coding, a need for extreme accuracy, and paying attention to detail. Additionally, there is a need to be able to shift attention before tasks are completed to be able to balance user demands, telephone and other interruptions.

- Must be able to drive and maintain a California Class C Driver's license or ability to arrange transportation for fieldwork or visits to other city facilities when necessary.

This classification specification does not constitute an employment agreement between the employer and employee and is subject to change by the city and the needs of the city and requirements of the job change. The City of Carlsbad is an Equal Opportunity Employer. In compliance with the Americans with Disabilities act, the city will provide reasonable accommodation to qualified individuals with disabilities and encourages both current and prospective employees to discuss potential accommodations with the employer.

DATE APPROVED: May 8, 2018